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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,831	01/14/2004	Kiyotaka Murashima	50212-566	2387
20277	7590	05/25/2005	EXAMINER	
MCDERMOTT WILL & EMERY LLP 600 13TH STREET, N.W. WASHINGTON, DC 20005-3096			PEACE, RHONDA S	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 05/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/756,831	Applicant(s) MURASHIMA ET AL. <span style="float: right;">(PM)</span>	
	Examiner Rhonda S. Peace	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- application*
- 1) ☒ Responsive to ~~communication(s)~~ *application* filed on 14 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/3/04</u> . | 6) <input type="checkbox"/> Other: _____  |

***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 5/3/2004 was filed in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

***Priority***

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 1/14/2003. It is noted, however, that applicant has not filed a certified copy of the Japanese application P2003-006146 as required by 35 U.S.C. 119(b).

***Inventorship***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 5, 8, 9, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Cole et al (US 6072926).

In reference to claims 1, 4, 5, 8, 9, and 12, Cole et al discloses a method of forming optical waveguide gratings, and the device by which this method can be executed. The method by which Cole et al forms optical waveguide gratings comprises disposing a phase grating mask **30** beside an optical waveguide **40**, irradiating the optical waveguide **40** in a longitudinal direction relative to the waveguide **40** during the scanning process with an irradiation means comprising a UV laser light source output **10** and a scanning mirror **20** (Figure 1). Further, Cole et al discloses vibrating the phase grating mask **30** in a longitudinal direction with respect to the waveguide **40**, using a piezoelectric stage **50**, upon irradiation, and changing the period of vibration of the phase grating mask **30** for each scan of the irradiation point (Figure 1; column 3 lines 26-40 and 53-60; column 5 lines 37-48). In addition, and pertaining to the device claims 5, 8, 9, 12, Cole et al clearly discloses the device for execution of the above-described method of forming an optical waveguide grating (column 3 lines 26-40 and 53-60; column 5 lines 37-48).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole et al (US 6072926).

Pertaining to the claims 2, 3, 6, and 7, Cole et al clearly describes the phase shift of the grating as being highly dependent upon the relative movement of the phase mask in relation to the optical waveguide. Further, Cole et al describes the method as previously described lends great flexibility as variation of the said relative movement will alter the phase shift of the optical fiber, thereby allowing the user to create a fiber to the specification to which they desire (column 3 lines 33-36). Therefore, it would be obvious to one skilled in the art that the above-mentioned method can be carried out with any designated number of irradiation scans from the laser light source. Further, it would also be obvious to one skilled in the art to manipulate relative movement between the phase mask and the optical fiber to produce a diffraction grating with any designated phase shift. Both choosing a irradiation scanning frequency and manipulating the relative movement of the phase mask and the fiber give the user a large degree of freedom in production, so that they may produce an optical diffraction grating that has the ability to be highly specialized to the user's purpose and provide numerous options

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for not only the number of irradiation points on the fiber, but also the phase shift of each irradiated section of the waveguide.

Claims 10, 11, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole et al (US 6072926), and further in view of Reid et al (US 6345135).

With reference to claims 10, 11, 13, and 14, Cole et al discloses the method of creating a diffraction grating on an optical fiber, as described above, in addition to a device for implementing the said method, as described above. In addition, Cole et al further states that optical fibers having such diffraction gratings are key components in many fiber optic and laser system, but makes no specific mention of multiplexer/demultiplexer or optical transmission systems as applications of the above mentioned device or method (column 1 lines 4-8). However, Reid et al discloses an optical reflector comprising a diffraction grating structure that can be incorporated into a wavelength division multiplexer or demultiplexer, and also used within optical telecommunications systems (column 1 lines 15-19; column 3 lines 16-22). It would have been obvious to one skilled in the art to combine the teachings of Cole et al and Reid et al, as diffraction gratings are common components within multiplexer/demultiplexer devices as well as optical transmission systems, and further, as diffraction gratings formed by the above-described method will allow the waveguide to be highly specialized, based upon the preferences of the user, to provide a

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waveguide more well-suited for the specific functions of the multiplexer/demultiplexer device or optical transmission system.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Rondinella et al (US 6591039) describes a method for forming a diffraction grating on a waveguide using a phase mask, ultraviolet light source, and an optical system to reflect the UV light upon the phase mask, where the phase mask is displaced to create an appropriate phase shift. Wang et al (US 6873762) describes a similar device, where the period of the interference pattern along the optical fiber is varied by varying the distance between the fiber and a condenser lens that focuses light from the phase mask onto the optical fiber.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda S. Peace whose telephone number is (571) 272-8580. The examiner can normally be reached on M-F (8-5).

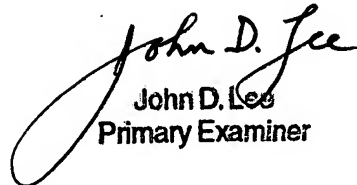
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272- 2344.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Rhonda S. Peace", followed by the date "5/24/05". The signature is written over a horizontal line.

Rhonda S. Peace  
Examiner  
Art Unit 2874

A handwritten signature in black ink, appearing to read "John D. Lee", followed by the text "John D. Lee" and "Primary Examiner" in a printed font. The signature is written over a horizontal line.